Understanding Lacking Trust in Global Software Teams: A Multi-case Study

Nils Brede Moe[1] and Darja Šmite[2]

[1] SINTEF Information and Communication Technology
NO-7465 Trondheim, Norway
Nils.B.Moe@sintef.no
[2] University of Latvia
LV-1050, Raiņa bulv.19, Rīga, Latvia
Darja.Smite@lu.lv

Abstract. Many organizations have turned toward globally distributed software development in their quest for higher-quality software delivered cheaply and quickly. But this kind of development has often been reported as problematic and complex to manage. One of the fundamental factors in determining the success and failure of globally distributed software teams is trust. The aim of our work has therefore been to describe the key factors causing lack of trust, and the main effects of lacking trust in such teams. From studying 4 projects, all located in two different countries, with trust problems we found the key factors to be poor socialization and socio-cultural fit, lack of face-to-face meetings, missing conflict handling and cognitive based trust, increased monitoring and too little communication. The effect of lacking trust was a decrease in productivity, quality, information exchange, feedback and morale among the employees; the monitoring increased and the employees doubted negative feedback from manager.

Keywords: Trust, global software development, global software teams, virtual teams, multi-case study.

1 Introduction

1.1 Global Software Development – Different, Complex, Urgent

Several organizations have turned toward globally distributed software development (GSD) in their quest for higher-quality software delivered cheaply and quickly. Today, more software projects are run in geographically distributed environments, and global software development is becoming a norm in the software industry [4].

GSD is said to have significant challenges with respect to communication, coordination and control issues, because of the temporal, geographical and socio-cultural distance between members of the joint development team [27] . For this GSD is recognized as considerably more complex to manage than even the most complex in-house projects [3, 17].

J. Münch and P. Abrahamsson (Eds.): PROFES 2007, LNCS 4589, pp. 20–34, 2007.

What distinguishes globally distributed projects from in-house projects are the environmental properties, also called global factors [23], that even capable project managers often overlook. However, the reason for failure of global projects is not the lack of capability, but a lack of awareness of issues, problems, and barriers associated with global work [6]. Likewise Sahay and Nicholson describe that the unpredictable nature of the risks in a global environment heightens the potential for unintended consequences [21]. The characteristics of GSD can be defined as follows [23]:

- Multisourcing – multiple distributed member involvement in a joint project, characterized by a number of collaboration partners.
- Geographic distribution – partners are located far away from each other.
- Temporal diversity – characterized by the level of working hours overlay.
- Socio-cultural diversity – level of social, ethnic, and cultural fit.
- Linguistic diversity – characterized by the level of language skills.
- Contextual diversity – level of organizational fit (diversity in process maturity and work practices).
- Political and legislative diversity - effect of cross border collaboration due to political threats or threats associated with incompatibility of laws.

Threats caused by the diversity that exists among the distributed teams involved in a project are seen as unavoidable conditions. These threats can lead to unexpected costs, considerable time delays and undermined morale of the collaborating teams.

The body of knowledge on global software development has been crafted over time, but there is still significant understanding to be achieved, methods and techniques to be developed, and practices to be evolved before it becomes a mature discipline [4, 21].

1.2 GSD Teams and Trust

A GSD team is a team whose members collaborate on a common software project while working across geographic, temporal, cultural, and relational boundaries to accomplish an interdependent task. A GSD team can also be characterised as a Virtual Team [18]. Organizations are driven to virtual forms in order to be more flexible, agile, responsive, and inexpensive [3]. One of the fundamental factors that are believed to be important in determining the success and failure of virtual teams is trust [12, 16, 18]. We define trust as "*the shared perception by the majority of team members that individuals in the team will perform particular actions important to its members and that the individuals will recognize and protect the rights and interests of all the team members engaged in their joint endeavour*" [25]. Virtual teams that exhibit a high degree of trust experience significant social communication as well as predictable communication patterns, substantial feedback, positive leadership, enthusiasm, and the ability to cope with technical uncertainty [14]. Trust functions as the glue that holds and links virtual teams together [16].

Jarvenpaa et al [15] argue that trust in a virtual team has a direct positive effect on cooperation and performance, and an increase in trust in a team with a weak structure is likely to have a direct, positive impact on team members' attitudes and perceived outcomes.